

Observations of Eclipses, Occultations, and Transits of Jupiter's Satellites, made with the 8-inch Cooke Equatorial at the Adelaide Observatory, South Australia: Longitude, 9h. 14m. 20s.3 E.; Latitude, 34° 56' 33".8 S.

(Communicated by Mr. Todd.)

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N. A.	Power used.
					h m s	h m s	h m s	h m s	
1	1885, Jan. 7.	C.	I. Tr. E.	Int. contact	11 5 6.7	1 50 46.4			200
2				Abt. bisected	11 7 13.7	1 52 53.4			"
3				Ext. contact	11 10 12.5	1 55 52.2			"
4	Jan. 15.	C.	I. Oc. R.	First seen	10 6 54.1	0 52 33.8			120
5				Ext. contact	10 10 46.3	0 56 26.0			"
6	Feb. 16.	C.	II. Sh. E.	Int. contact	10 28 17.0	1 13 56.7			200
7				Abt. bisected	10 29 22.2	1 15 1.9			"
8				Limb complete	10 30 47.7	1 16 27.4			"
9	Feb. 16.	C.	II. Tr. E.	Int. contact	10 33 45.9	1 19 25.6			"
10				Abt. bisected	10 35 18.4	1 20 58.1			"
11				Ext. contact	10 37 35.7	1 23 15.4			"
12	Feb. 21.	C.	I. Oc. D.	Ext. contact	10 53 42.8	1 39 22.5			"
13				Abt. bisected	10 55 49.8	1 41 29.5			"
14				Last seen	10 57 28.0	1 43 7.7			"
15	Feb. 21.	C.	I. Ec. R.	First seen	13 15 27.6	4 1 7.3	4 0 59	- 0 8	150±
16				Full blaze	13 17 27.6	4 3 7.3			"

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					h m s	h m s	h m s	h m s	
17	1885, Feb. 22.	C.	I. Tr. I.	Ext. contact	8 9 49.7	22 55 29.4			150 ±
18				Abt. bisected	8 11 23.6	22 57 3.3			"
19				Int. contact	8 14 36.8	23 0 16.5			"
20	Feb. 22.	C.	I. Sh. I.	Limb indented	8 17 38.8	23 3 18.5			"
21				Limb complete	8 20 35.5	23 6 15.2			"
22	Feb. 22.	C.	I. Tr. E.	Int. contact	10 27 26.4	1 13 6.1			250 ±
23				Abt. bisected	10 29 54.3	1 15 34.0			"
24				Ext. contact	10 33 6.9	1 18 46.6			"
25	Feb. 22.	C.	I. Sh. E.	Int. contact	10 33 31.6	1 19 11.3			"
26				Limb complete	10 35 47.7	1 21 27.4			"
27	Feb. 23.	C.	II. Tr. I.	Ext. contact	9 55 30.9	0 41 10.6			150 ±
28				Abt. bisected	9 57 57.9	0 43 37.6			"
29				Int. contact	10 2 30.9	0 48 10.6			"
30	Feb. 23.	C.	II. Tr. E.	Int. contact	12 47 59.6	3 33 39.3			"
31				Abt. bisected	12 50 54.6	3 36 34.3			"
32				Ext. contact	12 54 2.6	3 39 42.3			"
33	Feb. 23.	C.	II. Sh. E.	Int. contact	13 2 20.6	3 48 0.3			"
34				Still indented	13 4 17.6	3 49 57.3			"
35				Ext. contact	13 4 57.6	3 50 37.3			"
36	Feb. 25.	C.	II. Ec. R.	First seen	8 5 29.3	22 51 9.0	22 51 26	+ 0 17	"

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					h m s	h m s	h m s	h m s	
37				Quite distinct	8 5 56.4	22 51 36.1			150 ±
38				Full blaze	8 8 44.8	22 54 24.5			"
39 1885, Feb. 28.		C.	I. Oc. D.	Ext. contact	12 36 6.7	3 21 46.4			"
40				Abt. bisected	12 38 6.7	3 23 46.4			"
41				Last seen	12 40 35.7	3 26 15.4			"
42	Feb. 28.	C.	I. Ec. R.	First seen	15 9 18.5	5 54 58.2	5 54 57	— 0 1	"
43				Quite distinct	15 9 32.3	5 55 12.0			"
44				Full blaze	15 13 22.3	5 59 2.0			"
45	March 1.	C.	I. Tr. I.	Ext. contact	9 51 42.1	0 37 21.8			"
46				Int. contact	9 56 54.7	0 42 34.4			"
47	March 2.	C.	I. Ec. R.	First seen	9 38 5.2	0 23 44.9	0 23 27	— 0 18	"
48				Quite distinct	9 38 18.1	0 23 57.8			"
49				Full blaze	9 42 18.1	0 27 57.8			"
50	March 2.	C.	II. Tr. I.	Ext. contact	12 9 37.7	2 55 17.4			"
51				Abt. bisected	12 12 7.7	2 57 47.4			"
52				Int. contact	12 15 43.7	3 1 23.4			"
53	March 2.	O.	II. Sh. I.						
54	March 4.	C.	II. Ec. R.	First seen	10 41 45.2	1 27 24.9	1 27 51	+ 0 26	200
55				Quite distinct	10 41 52.5	1 27 32.2			"
56				Full blaze	10 45 47.5	1 31 27.2			"

Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N.A.	Power used.
				h m s	h m s	h m s	h m s	
57 1885, March 8.	C.	I. Tr. I.	Ext. contact	11 40 00	2 25 39.7			200
58			Abt. bisected	11 42 60	2 27 45.7			"
59			Int. contact.	11 43 56.0	2 29 35.7			"
60	March 8.	IV. Ec. R.	First seen	11 53 45.0	2 39 24.7	2 39 47	+ 0 22	"
61			Quite distinct	11 54 00	2 39 39.7			"
62			Full blaze	11 58 40.0	2 44 19.7			"
63	March 8.	I. Sh. I.	First seen	12 6 21.0	2 52 0.7			"
64			Int. contact	12 8 16.0	2 53 55.7			"
65	March 8.	C.	Ext. contact	14 0 33.8	4 46 13.5			"
66	March 8.	C.	Int. contact	14 21 6.7	5 6 46.4			"
67			Still indented	14 24 12.7	5 9 52.4			"
68			Limb complete	14 24 25.7	5 10 5.4			"
69	March 9.	S.	Ext. contact	8 47 32.1	23 33 11.8			"
70		I. Oc. D.	Abt. bisected	8 49 47.1	23 35 26.8			"
71			Limb complete	8 51 7.1	23 36 46.8			"
72	March 9.	S.	First seen	11 31 47.7	2 17 27.4	2 17 36	+ 0 9	"
73			Full blaze	11 35 56.7	21 21 36.4			"
74	March 9.	S.	Ext. contact	14 23 56.3	5 9 36.0			"
75			Abt. bisected	14 26 26.3	5 12 9.0			"
76			Int. contact	14 29 36.3	5 15 16.0			"

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N.A.	Power used.
77	1885, March 10.	S.	III. Ec. R.	First seen	h m s 8 0 49.1	h m s 22 46 28.8	h m s 22 46 52	h m s + 0 23	200
78				Quite distinct	8 1 34.1	22 47 13.8			"
79				Full blaze	8 6 34.1	22 52 13.8			"
80	March 10.	S.	I. Tr. E.	Int. contact	8 21 29.1	23 7 8.8			"
81				Ext. contact	8 26 9.1	23 11 48.8			"
82	March 10.	S.	I. Sh. E.	Int. contact	8 50 19.0	23 35 58.7			"
83				Limb complete	8 52 54.0	23 38 33.7			"
84	March 15.	S.	I. Tr. I.	Ext. contact	13 22 39.3	4 8 19.0			"
85				Abt. bisected	13 25 35.3	4 11 15.0			"
86				Int. contact	13 28 50.3	4 14 30.0			"
87	March 15.	S.	I. Sh. I.	Int. contact	14 3 0.3	4 48 40.0			"
88	March 16.	S.	IV. Tr. I.	Ext. contact	9 2 57.0	23 48 36.7			"
89				Abt. bisected	9 9 52.0	23 55 31.7			"
90				Int. contact	9 16 47.0	0 2 26.7			"
91	March 16.	S.	I. Oc. D.	Ext. contact	10 30 46.7	1 16 26.4			120
92				Limb complete	10 35 36.7	1 21 16.4			"
93	March 16.	S.	I. Ec. R.	First seen	13 25 59.3	4 11 39.0	4 11 54	+ 0 15	"
94				Full blaze	13 30 26.3	4 16 6.0			"
95	March 16.	S.	IV. Tr. E.	Ext. contact	13 53 41.3	4 39 21.0			"

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Ref No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time. h m s	Corresponding Greenwich Mean Time. h m s	Time by Nautical Almanac. h m s	Apparent Error of N.A. h m s	Power used.
96	1885, March 17.	S.	I. Tr. I.	Int. contact	7 57 4.8	22 42 44.5			200
97	March 17.	S.	I. Sh. I.	First seen	8 29 14.8	23 14 54.5			"
98				Int. contact	8 31 39.8	23 17 19.5			"
99	March 17.	S.	I. Sh. E.	Int. contact	10 44 24.5	1 30 4.2			"
100				Still indented	10 47 9.5	1 32 49.2			"
101				Limb complete	10 47 34.5	1 33 14.2			"
102	March 17.	S.	III. Ec. R.	First seen	11 59 55.4	2 45 35.1	2 45 12	- 0 23	120
103				Full blaze	12 5 44.4	2 51 24.1			"
104	March 18.	C.	I. Ec. R.	First seen	7 54 45.1	22 40 24.8	22 40 30	+ 0 5	200
105				Quite distinct	7 54 56.9	22 40 36.6			"
106				Full blaze	7 58 51.9	22 44 31.6			"
107	March 18.	S.	II. Oc. D.	Ext. contact	11 39 41.3	2 25 21.0			"
108				Abt. bisected	11 43 49.3	2 29 29.0			"
109				Still visible	11 45 11.3	2 30 51.0			"
110				Disappearance	11 45 29.3	2 31 9.0			"
111	March 20.	S.	II. Tr. E.	Ext. contact	9 48 36.9	0 34 16.6			"
112	March 23.	S.	I. Oc. D.	Ext. contact	12 17 7.1	3 2 46.8			"
113				Abt. bisected	12 19 59.1	3 5 38.8			"
114				Still visible	12 21 32.1	3 7 11.8			"

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by <i>Nautical Almanac</i> .	Apparent Error of <i>N.A.</i>	Power used.
					h m s	h m s	h m s	h m s	
115				Disappearance	12 21 42.1	3 7 21.8			200
116	1885, March 24.	S.	I. Tr. I.	Abt. bisected	9 38 54.8	0 24 34.5			"
117				Int. contact	9 42 4.8	0 27 44.5			"
118	March 24.	S.	I. Sh. I.	First seen	10 24 14.7	1 9 54.4			120
119				Int. contact	10 26 54.7	1 12 34.4			"
120	March 27.	S.	II. Tr. I.	Ext. contact	8 10 15.9	22 55 55.6			200
121				Abt. bisected	8 12 15.9	22 57 55.6			"
122				Int. contact	8 14 30.9	23 0 10.6			"
123	March 27.	S.	II. Sh. I.	First seen	9 48 40.7	0 34 20.4			"
124				Int. contact	9 51 5.7	0 36 45.4			"
125	March 27.	S.	II. Tr. E.	Int. contact	11 1 15.5	1 46 55.2			"
126				Abt. bisected	11 3 10.5	1 48 50.2			"
127				Ext. contact	11 5 40.5	1 51 20.2			"
128	April 1.	S.	I. Oc. D.	Ext. contact	8 31 35.8	23 17 15.5			"
129				Still visible	8 35 25.8	23 21 5.5			"
130				Disappearance	8 35 33.8	23 21 13.5			"
131	April 1.	S.	I. Ec. R.	First seen	11 43 39.5	2 29 19.2	2 29 35	+0 16	"
132				Quite distinct	11 43 45.5	2 29 25.2			"
133				Full blaze	11 46 20.5	2 32 0.2			"

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N.A.	Power used.
					h m s	h m s	h m s	h m s	
134	1885, April 2.	S.	I. Tr. E.	Int. contact	8 9 18.2	22 54 57.9			200
135				Ext. contact	8 12 43.2	22 58 22.9			"
136	April 2.	S.	IV. Sh. I.	Int. contact	8 49 33.2	23 35 12.9			"
137	April 8.	C.	I. Oc. D.	Ext. contact	10 19 38.0	1 5 17.7			"
138				Abt. bisected	10 21 26.0	1 7 5.7			"
139				Still visible	10 23 32.0	1 9 11.7			"
140				Disappearance	10 23 42.0	1 9 21.7			"
141	April 9.	C.	I. Tr. I.	Ext. contact	7 40 39.6	22 26 19.3			300
142				Abt. bisected	7 42 58.6	22 28 38.3			"
143				Int. contact	7 45 13.6	22 30 53.3			"
144	April 9.	C.	I. Sh. I.	First seen	8 42 38.0	23 28 17.7			200
145				Int. contact	8 45 29.5	23 31 9.2			"
146	April 9.	C.	I. Tr. E.	Int. contact	9 57 33.3	0 43 13.0			300
147				Abt. bisected	9 59 23.3	0 45 3.0			"
148				Ext. contact	10 1 37.3	0 47 17.0			"
149	April 9.	C.	I. Sh. E.	Int. contact	10 57 33.2	1 43 12.9			200
150				Limb complete	11 0 25.2	1 46 4.9			"
151	April 10.	C.	I. Ec. R.	First seen	8 7 12.7	22 52 52.4	22 52 57	+0 5	"
152				Quite distinct	8 7 20.9	22 53 0.6			"

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153				Full blaze	h m s 8 10 50.9	h m s 22 56 30.6	h m s		200
154	1885, April 10.	C.	IV. Oc. D.	Ext. contact	9 23 30.8	0 9 10.5			"
155				Still visible	9 31 10.8	0 16 50.5			"
156				Disappearance	9 31 26.8	0 17 6.5			"
157	April 17.	C.	I. Oc. D.	Ext. contact	6 37 24.0	21 23 3.7			300
158				Abt. bisected	6 39 11.0	21 24 50.7			"
159				Int. contact	6 40 50.0	21 26 29.7			"
160	April 27.	C.	IV. Oc. R.	Ext. contact	6 36 35.7	21 22 15.4			200
161	April 28.	C.	II. Tr. I.	Ext. contact	7 4 3.1	21 49 42.8			"
162				Abt. bisected	7 6 27.1	21 52 6.8			"
163				Int. contact	7 8 40.1	21 54 19.8			"
164	April 28.	C.	II. Sh. I.	Int. contact	9 32 12.8	0 17 52.5			"
165	April 28.	C.	II. Tr. E.	Abt. bisected	9 58 32.8	0 44 12.5			"
166				Ext. contact	10 0 25.8	0 46 5.5			"
167	April 29.	S.	III. Oc. R.	First seen	7 1 35.8	21 47 15.5			"
168				Ext. contact	7 3 0.8	21 48 40.5			"
169	April 29.	S.	III. Ec. D.	Very faint	8 30 30.7	23 16 10.4			"
170				Disappearance	8 30 52.7	23 16 32.4	23 12 41	-3 51	"
171	April 29.	C.	III. Ec. R.	First seen	11 53 44.2	2 39 23.9	2 38 10	-1 14	120

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N.A.	Power used.
					h m s	h m s	h m s	h m s	
172				Quite distinct	11 53 57.4	2 39 37.1			120
173				Full blaze	12 1 10.4	2 46 50.1			"
174	1885, April 30.	C.	II. Ec. R.	First seen	7 30 51.6	22 16 31.3	22 17 17	+ 0 46	200
175				Quite distinct	7 31 5.8	22 16 45.5			"
176				Full blaze	7 35 7.8	22 20 47.5			"
177	May 2.	C.	I. Tr. I.	Ext. contact	7 41 26.1	22 27 5.8			300
178				Abt. bisected	7 44 9.1	22 20 48.8			"
179				Int. contact	7 46 9.1	22 31 48.8			"
180	May 10.	C.	I. Oc. D.	Ext. contact	6 42 1.5	21 27 41.2			200
181				Abt. bisected	6 43 44.5	21 29 24.2			"
182				Last seen	6 45 22.5	21 31 2.2			"
183	May 10.	C.	I. Ec. R.	First seen	10 15 57.2	1 1 36.9	1 1 33	- 0 4	"
184				Quite distinct	10 16 6.2	1 1 45.9			"
185				Full blaze	10 19 44.2	1 5 23.9			"
186	May 22.	S.	IV. Tr. E.	Ext. contact	7 32 21.3	22 18 1.0			"
187	May 25.	S.	I. Tr. I.	Ext. contact	7 52 21.9	22 38 1.6			"
188				Abt. bisected	7 54 41.9	22 40 21.6			"
189.				Int. contact	7 58 21.9	22 44 1.6			"
190	May 27.	S.	I. Sh. E.	Int. contact	5 50 16.9	20 35 56.6			"

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N.A.	Power used.
191				Limb complete	h m s 5 53 16.9	h m s 20 38 56.6	h m s		200
192	1885, May 30.	S.	II. Tr. I.	Ext. contact	6 40 37.4	21 26 17.1			"
193				Abt. bisected	6 42 47.4	21 28 27.1			"
194				Int. contact	6 46 52.4	21 32 32.1			"
195	June 1.	S.	II. Ec. R.	First seen	7 10 32.8	21 56 12.5	21 56 49	+ 0 37	"
196				Quite distinct	7 10 37.8	21 56 17.5			"
197				Full blaze	7 13 32.8	21 59 12.5			"
198	June 9.	C.	I. Oc. D.	Ext. contact	8 53 54.5	23 39 34.2			"
199				Abt. bisected	8 55 41.5	23 41 21.2			"
200				Last seen	8 57 4.5	23 42 44.2			"
201	June 10.	S.	I. Tr. I.	Ext. contact	6 15 33.5	21 1 13.2			"
202				Abt. bisected	6 17 28.5	21 3 8.2			"
203				Int. contact	6 20 18.5	21 5 58.2			"
204	June 10.	S.	I. Tr. E.	Ext. contact	8 37 33.5	23 23 13.2			"
205	June 11.	C.	I. Ec. R.	First seen	6 54 8.4	21 39 48.1	21 39 37	- 0 11	"
206				Quite distinct	6 54 12.9	21 39 52.6			"
207				Full blaze	6 57 40.9	21 43 20.6			"
208	June 11.	C.	III. Oc. R.	First seen	7 3 23.9	21 49 3.6			300
209				Ext. contact	7 8 20.9	21 54 0.6			"

Ref. No.	Date.	Observer.	Phenomenon.	Phase of Phenomenon.	Adelaide Mean Time.	Corresponding Greenwich Mean Time.	Time by Nautical Almanac.	Apparent Error of N.A.	Power used.
210	1885, June 11.	C.	III. Ec. D.	Very faint	h m s 8 27 30.9	h m s 23 13 10.6	h m s	h m s	200
211				Last seen	8 27 42.9	23 13 22.6	23 10 18	-3 5	"
212	June 17.	S.	I. Tr. I.	Ext. contact	8 12 48.9	22 58 28.6			120
213				Int. contact	8 18 8.9	23 3 48.6			"
214	July 6.	C.	III. Tr. I.	Ext. contact	6 12 43.5	20 58 23.2			200
215				Abt. bisected	6 16 26.5	21 2 6.2			"
216				Int. contact	6 22 31.5	21 8 11.2			"
217	July 12.	C.	I. Tr. E.	Int. contact	5 25 37.8	20 11 17.5			"
218				Abt. bisected	5 27 37.8	20 13 17.5			"
219				Ext. contact	5 29 47.8	20 15 27.5			"

Observers: C. = Mr. Cooke. S. = Mr. Sells.

Drawings of Jupiter and Saturn.

The Society has been presented by Mr. C. Todd with a series of 28 drawings of *Jupiter*, made at Adelaide with the 8-inch refractor between 1885, April 27, and 1886, February 9; and by Mr. K. F. Tarrant, with four drawings of *Jupiter* on 1885, February 15, March 15, 21, 29, and one of *Saturn*, made with a reflector of 10 inches aperture. These drawings have been placed in the Library.